from 180 to 1000 to produce an effluent containing propylene, the propylene yield on an olefin basis being from 30 to 50% based on the olefinic content of the feedstock.

Amend Claim 11 to read:

11 (Amended). A process according to Claim 1, wherein the catalyst has been pretreated by heating the catalyst in steam and de-aluminating the catalyst by treating the catalyst with a complexing agent for aluminum, the pretreatment increasing the silicon/aluminum atomic ratio of the catalyst to a value [at least about] from 180 to 1000.

REMARKS

Claims 1-14 are rejected under 35 USC §103. The Applicants respectfully traverse these rejections and request reconsideration of the application in view of the above amendments and the following remarks.

Claim 10 has been canceled and Claims 1 and 11 have been amended. None of these changes constitute new matter since this clarification of the claims is supported by the original disclosure.

Claims 1-14 are rejected under 35 USC 103(a) as being unpatentable over Leyshon et al. Specifically, the Office Action suggests that Leyshon et al discloses a process for producing propylene from an olefinic feed by contacting the feed with a high silica content catalyst under conditions similar to those of the claimed invention.

Claims 1 and 11 have been amended. Claims 1 and 11 now reads in part "a catalyst of the

MFI-type having a silicon/aluminum atomic ratio of from 180 to 1000" and increasing the silicon/aluminum atomic ratio of the catalyst to a value from 180 to 1000", respectively. Support for this language is found on page 13, line 21. This change in language has been made to Claims 1 and 11 to clarify the claimed subject matter.

Leyshon et al does not disclose or suggest a process for the production of propylene as claimed in which the catalyst has a silicon/aluminum atomic ratio of from 180 to 1000. As discussed in detail in the description of the present application in particular in the passage from page 13, line 2, to page 14, line 45, the present inventors found that by providing a silicon/aluminum atomic ratio which is from 180 to 1000, whereby the catalyst has relatively low acidity, the durability of the catalyst over time was greatly increased. There is no suggestion in the cited specification either of the claimed silicon/aluminum atomic ratio range or of this advantage.

Leyshon, et al discloses simply that in zone 101 a zeolitic catalyst is employed for cracking of the feed hydrocarbon to form a light olefin product. There is, however, not the remotest suggestion of the use of such a zeolite catalyst having a silicon/aluminum atomic ratio as required by Claim 1., as amended. In fact, Leyshon et al does not disclose anywhere in the specification a specific silicon/aluminum atomic ratio for the catalyst. Rather, Leyshon, et al suggests using acid zeolites, in other words, zeolites having a high aluminum content, and thus a low silicon/aluminum atomic ratio, in total contrast to the present invention. Thus, at Column 3, line 65, to Column 4, line 2, it is disclosed that the zeolite catalysts such as silaceous, crystalline molecular sieves which

"include materials which contain, in addition to silica, significant amounts of alumina." Such crystalline materials are referred to as "crystalline alumino silicates." It is disclosed that "acid zeolites are expressly preferred, particularly the ZSM type" (Column 4, lines 17 to 18). In the passage at Column 4, lines 49 to 57, it is disclosed that the inorganic oxide which serves as the matrix may include silica-alumina or silica-alumina-zirconia cogel. With Example 1, it is merely disclosed that a ZSM-5 catalyst is employed in Zone 101.

Thus, Leyshon et al does not remotely suggest to the skilled person the use of the catalyst of the MFI-type having a silicon/alumina atomic ratio of from 180 to 1000. Rather it is suggested that at least one of the zeolite or a cogel in which the crystalline zeolite is dispersed includes aluminum.

Comparative Example 5 of the present application employs the commercially available ZSM-5 catalyst having a silicon/aluminum atomic ratio of 25. As discussed in the specification that catalyst suffered from the disadvantage of low catalyst stability as a result of the use of a low silicon/aluminum atomic ratio. The ZSM-5 catalyst employed in Comparative Example 5 appears to be similar to or the same as that employed in Example 1 of Leyshon et al. In addition, Comparative Examples 1 and 2 of the present specification employed as silicon/aluminum atomic ratio of 120, below the range defined in the amended Claim 1, and those catalysts also exhibited low stability over time. Furthermore, in Comparative Example 3, the catalyst was mixed with an alumina binder, again leading to a deterioration in the stability of the catalyst over time. It is accordingly submitted that the Comparative Examples, differing with respect to the selection of the

silicon/aluminum ratio required by Claim 1, as amended, demonstrate a surprising technical effect which could not have been predicted from Leyshon, et al. Accordingly, it is submitted that Claim 1, as amended, is unobvious over the disclosure of Leyshon et al.

A Petition and Fee for Extension of Time under 37 CFR §1.136(a) is being filed concurrently with this response. The Commissioner is hereby authorized to charge any fees due by filing this paper or to credit any overpayment to Account No. 03-3345.

On the basis of the above amendments and remarks, reconsideration of this application is requested and its allowance requested at the examiner's earliest convenience. No new matter has been added.

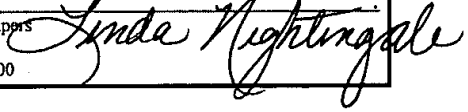
Respectfully submitted,

Jim Wheelington
Reg. No. 33,051
Fina Technology, Inc.
PO Box 674412
Houston, TX 77267-4412
(281) 227-5368

Mailing Certificate

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE U.S. POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO: BOX: FEE AMENDMENT, ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON, D.C. 20231 ON July 28, 2000. BY: Linda Nightingale.

I:\Nightingale\Patent Files and Forms\F-722\Amend 37CFR.doc

Signature of Person Mailing Papers 

Date of Signature: July 28, 2000